JANUARY/FEBRUARY 2002

FAA Aviation News

AVIATION SAFETY FROM COVER TO COVER

Cover Story:

National Security And Interception Procedures

U.S. Department
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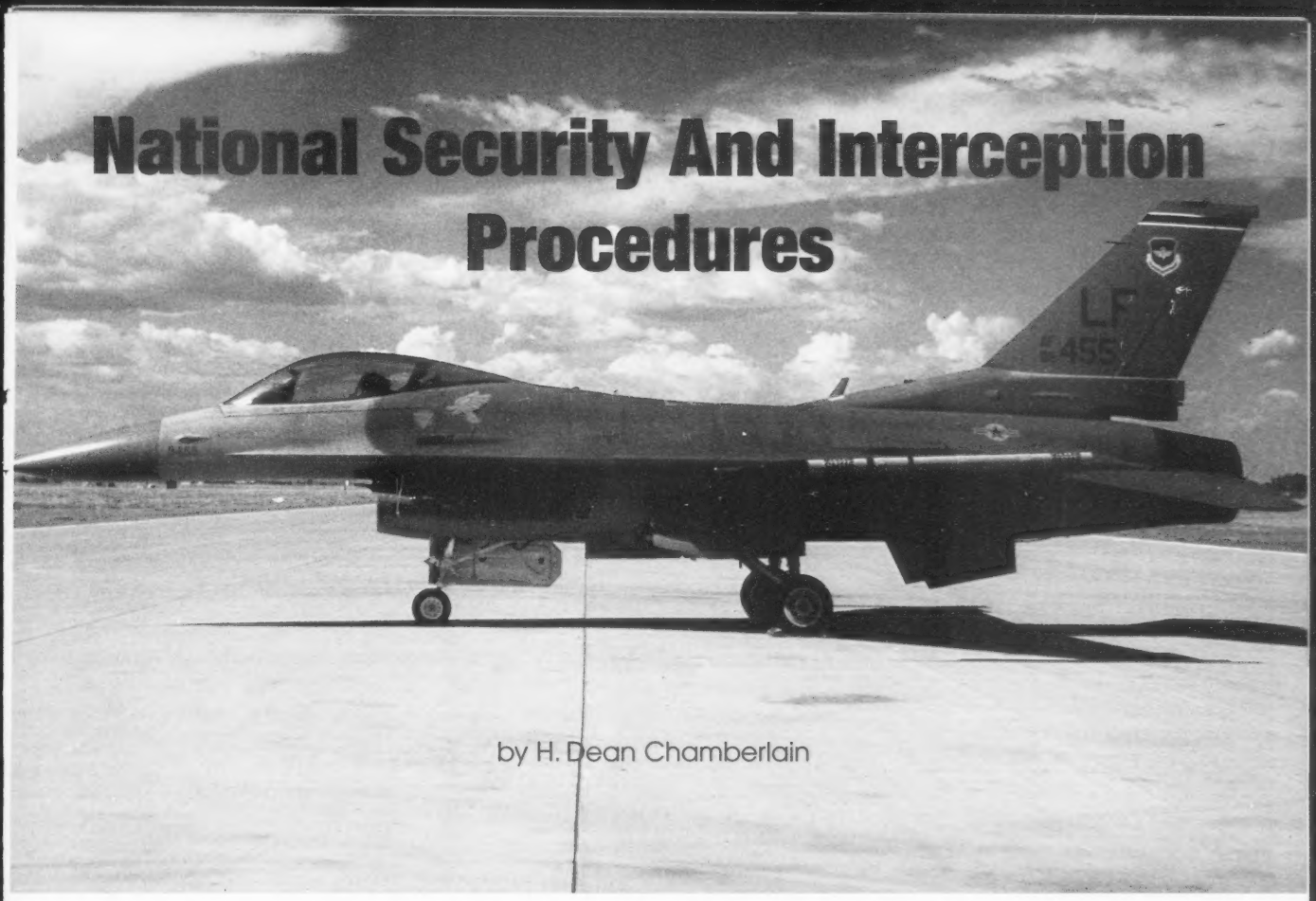
FRONT COVER: A 1981 Tomahawk II *in flight. (photo courtesy of the manufacturer)*

BACK COVER: Learjet 45 *(photo courtesy of Bombardier, Inc.)*

National Security And Interception Procedures



by H. Dean Chamberlain

The above headline is not new. It is the title of Section 6, Chapter 5, Air Traffic Procedures, in the *Aeronautical Information Manual* (AIM). Paragraph two of Section 6, 5-6-2, Interception Procedures, outlines the standard, peacetime, intercept procedures that pilots can expect if they are intercepted. In light of the post-September 11, 2001, hijackings and the well-publicized interception of aircraft after that date, both air carrier and general aviation types, all pilots should review the basic intercept procedures in the AIM and the latest intercept procedures published in the current *Notices to Airmen* (NOTAMS).

Although most interceptions in the past were of aircraft penetrating the U.S., that is not necessarily true today. Although the AIM intercept procedures are those for peacetime identification of unknown aircraft entering the U.S. through an Air Defense Identification Zone (ADIZ), the procedure for intercepting any aircraft is very similar. In the case of several well-publicized air carrier intercepts, especially the airliner flying into Chicago's O'Hare airport after a passenger tried to get into the cockpit, the intercepting fighters escorted the American Airlines jet to the airport.

To put this all into perspective and under the assumption that some type of flight restrictions may still be in place in January, *FAA Aviation News* is reprinting excerpts from the AIM and current NOTAMS pertaining to intercepts as a reminder of the recommended procedures to use in case of an intercept.

The following are copies of NOTAMS current as of the date this article is being written, November 5. They all discuss current intercept procedures pilots need to be aware of. Because of the dynamic nature of the NOTAMS, pilots need to review the current NOTAMS before every flight to ensure they have the latest information. In case of any doubt, contact a Flight Service Station office at 1-800-WXBRIEF for the latest information.

!FDC 1/0329 (and FDC 1/0330 Int'l version) FDC U.S. NATIONAL AIRSPACE SYSTEM INTERCEPT PROCEDURES. UNTIL FURTHER NOTICE ALL AIRCRAFT OPERATING IN THE U.S. NATIONAL AIRSPACE, IF CAPABLE, WILL MAINTAIN A LISTENING WATCH ON VHF GUARD 121.5 OR UHF 243.0. IT IS INCUMBENT ON ALL AVIATORS TO KNOW AND UNDERSTAND THEIR RESPONSIBILITIES IF INTERCEPTED. REVIEW "AERONAUTICAL INFORMATION MANUAL" SECTION 6, 5-6-2 FOR INTERCEPT PROCEDURES.

!FDC 1/0298 FDC FLIGHT RESTRICTIONS EFFECTIVE IMMEDIATELY UNTIL FURTHER NOTICE. PURSUANT TO 14 CFR SECTION 91.137A(1) TEMPORARY FLIGHT RESTRICTIONS - FOR REASONS OF NATIONAL SECURITY ALL AIRCRAFT OPERATIONS ARE PROHIBITED WITHIN A THREE NAUTICAL MILE

RADIUS/3,000 FEET AGL AND BELOW OVER ANY MAJOR PROFESSIONAL OR COLLEGIATE SPORTING EVENT OR ANY OTHER MAJOR OPEN AIR ASSEMBLY OF PEOPLE. UNLESS AUTHORIZED BY ATC FOR PURPOSES OF CONDUCTING ARRIVAL/DEPARTURE OPERATIONS.

!FDC 1/0609 (and FDC 1/0610 Int'l version) FDC SPECIAL NOTICE - - RESTRICTED/PROHIBITED AREA ENFORCEMENT -

EFFECTIVE IMMEDIATELY, COMMERCIAL AND PRIVATE AIRCRAFT FLYING INSIDE, OR IN CLOSE PROXIMITY TO, NEWLY ESTABLISHED OR CURRENTLY EXISTING RESTRICTED OR PROHIBITED AREAS OF THE UNITED STATES WILL BE SUBJECT TO BEING FORCED DOWN BY ARMED MILITARY AIRCRAFT. IF NECESSARY, THE MILITARY HAS INDICATED THAT DEADLY FORCE WILL BE USED TO PROTECT THESE AREAS FROM UNAUTHORIZED INCURSIONS.

THESE MEASURES ARE NECESSARY IN RESPONSE TO THE TERRORIST ATROCITIES OF SEPT. 11, 2001, WHICH CAUSED THOUSANDS OF INNOCENT CIVILIAN CASUALTIES. THE MILITARY WILL USE DEADLY FORCE ONLY AS A LAST RESORT, AFTER ALL OTHER MEANS ARE EXHAUSTED. THIS NEW POLICY IS IN EFFECT UNTIL FURTHER NOTICE. OFFICIAL CHARTS OUTLINING THE NEW RESTRICTED OR PROHIBITED AREAS WILL BE MADE AVAILABLE AS SOON AS POSSIBLE. THESE AREAS WILL BE PERIODICALLY REVISED AND WILL THEREFORE REQUIRE THAT EACH PILOT RECEIVE AN UP TO DATE BRIEFING ON THE STATUS OF THESE AREAS PRIOR TO EVERY FLIGHT. IN ADDITION, ALL AIRCRAFT OPERATING IN THE U.S. NATIONAL AIRSPACE AND IN CLOSE PROXIMITY TO THE SUBJECT AREAS, IF CAPABLE, WILL MAINTAIN A LISTENING WATCH ON VHF GUARD 121.5 OR UHF 243.0. IT IS INCUMBENT ON ALL AVIATORS TO KNOW AND UNDERSTAND THEIR RESPONSIBILITIES IF INTERCEPTED. REVIEW AERONAUTICAL INFORMATION MANUAL SECTION 6, 5-6-2 FOR INTERCEPT PROCEDURES.

Because of the seriousness of the above NOTAMS and the fact we, *FAA Aviation News*, do not know how long these NOTAMS will be effective, the following information is a verbatim copy of the intercept procedures in the AIM. We hope this information gives each pilot a better understanding of what to expect if intercepted by armed fighters. The time to wonder what two F-16 fighters are going to do next is not while they are joining on your wingtips.

5-6-2. Interception Procedures

a. General.

1. Identification intercepts during peacetime operations are vastly different than those conducted under increased states of readiness. Unless otherwise directed by the control agency, intercepted aircraft will be identified by type only. When specific information is required (i.e. markings, serial numbers, etc.) the interceptor aircrew will respond only if the request can be conducted in a safe manner. During hours of darkness or Instrument Meteorological Conditions (IMC), identification of unknown aircraft will be by type only. The interception pattern described below is the typical peacetime method used by air interceptor aircrews. In all situations, the interceptor aircrew will use caution to avoid startling the intercepted aircrew and/or passengers.

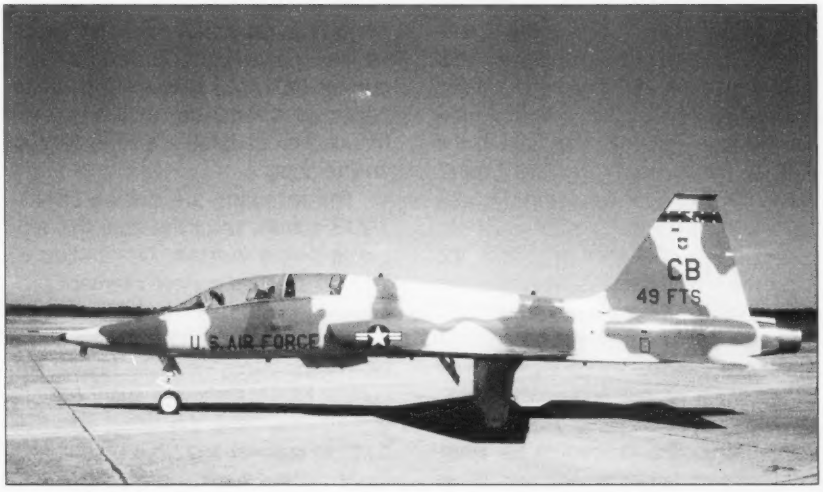
b. Intercept phases (See FIG 5-6-1).

1. Phase One- Approach Phase.

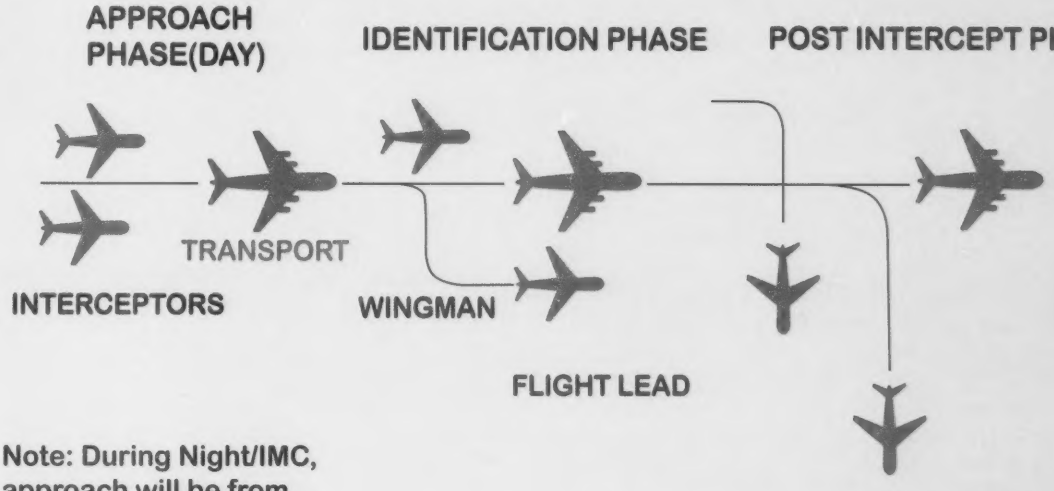
During peacetime, intercepted aircraft will be approached from the stern. Generally two interceptor aircraft will be employed to accomplish the identification. The flight leader and wingman will coordinate their individual positions in conjunction with the ground controlling agency. Their relationship will resemble a line abreast formation. At night or in IMC, a comfortable radar trail tactic will be used. Safe vertical separation between interceptor aircraft and unknown aircraft will be maintained at all times.

2. Phase Two- Identification Phase.

The intercepted aircraft should expect to visually acquire the lead interceptor and possibly the wingman during this phase in visual meteorological conditions (VMC). The wingman will assume a surveillance position while the flight leader approaches the unknown aircraft. Intercepted aircraft personnel may observe the use of different drag devices to allow for speed and position stabilization during this phase. The flight leader will then initiate a gentle closure toward the inter-



INTERCEPTION PATTERNS FOR IDENTIFICATION OF INTERCEPTED AIRCRAFT (TYPICAL)



Note: During Night/IMC, approach will be from below flight path.

Fig 5-6-1

cepted aircraft, stopping at a distance no closer than absolutely necessary to obtain the information needed. The interceptor aircraft will use every possible precaution to avoid startling intercepted aircrew or passengers. Additionally, the interceptor aircrews will constantly keep in mind that maneuvers considered normal to a fighter aircraft may be considered hazardous to passengers and crews of nonfighter aircraft. When interceptor aircrews know or believe that an unsafe condition exists, the identification phase will be terminated. As previously stated, during darkness or IMC identification of unknown aircraft will be by type only. Positive vertical separation will be maintained by interceptor aircraft throughout this phase.

3. Phase Three-
Post Intercept Phase.

Upon identification phase completion, the flight leader will turn away from the intercepted aircraft. The wingman will remain well clear and accomplish a rejoin with the leader.

c. Communication interface between interceptor aircrews and the ground controlling agency is essential to ensure successful intercept completion. Flight safety is paramount. An aircraft which is intercepted by another aircraft shall immediately:

1. Follow the instructions given by the intercepting aircraft, interpreting and responding to the visual signals.

2. Notify, if possible, the appropriate air traffic services unit.

3. Attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 243.0 MHz and repeating this call on the emergency frequency 121.5 MHz, if practicable, giving the identity and position of the aircraft and the nature of the flight.

4. If equipped with SSR transponder, select MODE 3/A Code 7700, unless otherwise instructed by the appropriate air traffic services unit. If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual or radio signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the instructions given by the intercepting aircraft.

5-6-4. Interception Signals
[Table 5-6-1 and Table 5-6-2, next page]

This information is available in both the printed AIM and the FAA's Internet web site at <www.faa.gov/NTAP>. The site contains the latest NOTAMS about flight restrictions and links to other air traffic publications.

INTERCEPTING SIGNALS

Signals initiated by intercepting aircraft and responses by intercepted aircraft (as set forth in ICAO Annex 2-Appendix A, 2.1)

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	DAY-Rocking wings from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft and, after acknowledgement, a slow level turn, normally to the left, on to the desired heading. NIGHT-Same and, in addition, flashing navigational lights at irregular intervals. NOTE 1-Meteorological conditions or terrain may require the intercepting aircraft to take up a position slightly above and ahead of, and to the right of, the intercepted aircraft and to make the subsequent turn to the right. NOTE 2-If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock its wings each time it passes the intercepted aircraft.	You have been intercepted. Follow me.	AEROPLANES: DAY-Rocking wings and following. NIGHT-Same and, in addition, flashing navigational lights at irregular intervals. HELICOPTERS: DAY or NIGHT-Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.
2	DAY or NIGHT-An abrupt break-away maneuver from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	AEROPLANES: DAY or NIGHT-Rocking wings. HELICOPTERS: DAY or NIGHT-Rocking aircraft.	Understood, will comply.
3	DAY-Circling aerodrome, lowering landing gear and overflying runway in direction of landing or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. NIGHT-Same and, in addition, showing steady landing lights.	Land at this aerodrome	AEROPLANES: DAY-Lowering landing gear, following the intercepting aircraft and, if after overflying the runway landing is considered safe, proceeding to land. NIGHT-Same and, in addition, showing steady landing lights (if carried). HELICOPTERS: DAY or NIGHT-Following the intercepting aircraft and proceeding to land, showing a steady landing light (if carried).	Understood, will comply.

Table 5-6-1

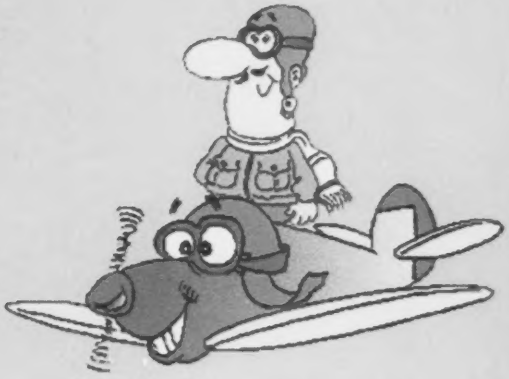
INTERCEPTING SIGNALS

Signals and Responses During Aircraft Intercept Signals initiated by intercepted aircraft and responses by intercepting aircraft (as set forth in ICAO Annex 2-Appendix A, 2.2)

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT-Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300m (1,000 ft) but not exceeding 600m (2,000 ft) (in the case of a helicopter, at a height exceeding 50m (170 ft) but not exceeding 100m (330 ft) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT-If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
5	DAY or NIGHT-Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT-Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT-Irregular flashing of all available lights	In distress.	DAY or NIGHT-Use Series 2 signals prescribed for intercepting aircraft.	Understood

Table 5-6-2

Safety First: Paranoia or Personal Safety



by Patricia Mattison

"It was the best of times, it was the worst of times...." We have heard this quote from Dickens before, but who would have expected the discomfort and concern that we Americans are feeling? A faction of hate that we never thought would touch us personally shakes us to our very foundations. Suddenly we all have to be on the alert for suspicious individuals and vehicles and for packages and envelopes from heaven knows where. I was once told that paranoia is the height of awareness. I'm not sure I like this paranoia at all.

We in Alaska are not feeling the loss as much as our fellow pilots in the lower forty-eight, but flight restrictions are here just the same. There are economic considerations to be sure, but the loss of personal freedom is, in my opinion, far worse than the loss of money and all that it brings. We can all tighten our belts and make it through the thin times, but taking away our ability to travel where and when we want to safely hits us where it hurts.

I would like to ask all of you who are planning to travel in the near future and also during the continuing war against terrorism that you remain alert for unusual activity in and around airports and aircraft. When you are in a line preparing to enter the screening area or even at the ticket counter, never joke around about anything concerning a bomb, gun, or knife. Your harmless conversation could be misconstrued as a threat. Someone did that recently and landed in jail. Even our young people are subject to the same level of scrutiny. They will be arrested too. No one can be considered exempt from suspicion when our national security is at risk.

Only take with you those items that are approved to be in the cabin in your hand carried luggage, briefcase, or purse. Everyday items of convenience such as cell phones and computers will be inspected thoroughly. Place the rest of your personal items, such as sewing scissors, metal nail files, Leatherman™ tools, etc., in your checked baggage. Resist taking flammable items, however small, with you. A couple of years ago a traveler put some matches in checked luggage and it ignited in the cargo bay. An alert cargo handler noticed a small amount of smoke and removed the luggage. Imagine if it had occurred at altitude. That was a mistake on the part of the passenger. Now it is purposeful intent to cause harm for which we need to be alert. Don't take anything for granted. If you see something that you question, bring it to the attention of someone in authority. You might be wrong, but then again you might be the very person to save lives by your question.

Be proactive in any situation that might be a danger either to yourself or those around you. Protect yourself by vigilance and attention to detail. Be patient with this new heightened security as it is in everyone's best interest.

+

Patricia Mattison is the Safety Program Manager at the Juneau Flight Standards District Office.

Currency:

How Much Is Yours Worth?

story and photos by H. Dean Chamberlain

It's a new year. The holidays are over, and your holiday bills have not yet arrived. Now, before credit card shock sets in, is the time to begin planning your spring flight recurrency program. Treat yourself to a New Year's resolution to keep current. To start the year off right, you should give yourself the gift of some refresher training if you have not kept current over the winter months.

In past years, *FAA Aviation News* wrote about why those pilots who did not fly over the winter months should get some refresher training to start the new year. This year is different. Because of national security flight restrictions in the country after the September 11 attacks, some pilots may not have been able to fly at all this fall and winter. For those pilots in the restricted areas, currency poses a special challenge. As we add in the stress of being restricted and not being permitted to fly, flight currency and proficiency takes on a whole new meaning. (It is hard to project what flight restrictions may be in place when you read this article since this is being written the third week of October as some of the restrictions continue to be lifted.)

But whether you are out of currency because of the time of year, lack of money, or a flight restriction, the result is the same. You may not be safe to fly. You may not only be out of FAA currency to be pilot in command (PIC), but you may also be out of proficiency. Currency keeps you legal. Proficiency keeps you safe.

So what can you do?

Last year, we would have said—contact your local certificated flight instructor (CFI). Find one who is knowledgeable and proficient in the type of aircraft you fly and take a couple of hours of dual instruction and an hour or two of ground school. Not only would this give you some valuable training with a well-qualified safety pilot, but the time would also count towards your FAA Pilot Proficiency Awards Program "Wings" phase. A completed "Wings" phase may also help reduce your insurance costs. Ask your insurance agent if your aviation policy gives lower rates for participation in the Wings program. Another advantage of flying with your local CFI is the opportunity to complete an FAA required flight review. A "Wings" phase can also

count as a flight review.

Times have changed.

First, everyone planning a flight these days needs to review the current *Notices To Airmen* (NOTAMS) to ensure the flight is permitted. Whether a flight restriction is an ongoing one from the initial September 11 attack or one just released because of some terrorist attack, everyone needs to make NOTAM checking a preflight habit.

Then, according to various national and local government and business leaders, everyone—pilots, and maintenance technicians—have a responsibility to help the economy by spending money. A great way to do that is through recurrency training. You can do your share by helping those general aviation companies that have been hit hardest by the many flight restrictions by buying training materials, and, where possible, flight checkouts or additional training. They need your help, and you may need the recurrency training. It is the classic win-win situation. It is not often you can say to your spouse, "But Dear, it is my patriotic duty to go flying."

If you live in an area still under a flight restriction, visit your nearest fixed-base operator that is operating outside of the restriction. Better yet, take a vacation to your favorite vacation spot and log a few hours once you get there. The Internet is a great source for finding flight training in any given area.

With all of the challenges facing pilots today, one of the most interesting ways to regain your flight proficiency is by adding a rating to your pilot certificate. Recently, *FAA Aviation News* was able to observe a commercial glider add-on-rating test with the permission of the applicant.

For those not familiar with a glider add-on rating, the following is a brief explanation of the two ways of becoming a glider pilot.

For someone with no flight experience, that person can become a student glider pilot and advance to private and commercial glider pilot by completing all of the glider category eligibility, training, and experience requirements outlined in 14 Code of Federal Regulations (CFR) Part 61. This is the way many youngsters become glider pilots since they can become student glider pilots at 14 years of age and private glider pilots at 16 years of age. Although one is never too old to learn to fly as long as the person can meet the appropriate requirements.

However, for those pilots with a specified minimum amount of pilot time in heavier-than-air aircraft, they can add a glider category rating with less glider flight time and number of glider flights than someone with no flight experience because the regulations recognize the training value of the previous heavier-than-air flight time.

For example, a glider pilot who has not logged at least 40 hours of flight time as a pilot in a heavier-than-air aircraft must log at least 10 hours of

Page 6 photo shows Bob Anstatt, standing at the left wing tip, checking for conflicting traffic prior to takeoff of the Schweizer SGS 2-33A glider. Above, Ric Niehaus, a commercial glider add-on rating applicant, prepares to attach his shoulder harness with the assistance of FAA Inspector Frank Phillips.

Inspector Frank Phillips (right) listens to Ric Niehaus, with appropriate checklist in hand, exhibit PTS commercial glider rating knowledge of the elements related to preflight inspection.

flight time in a glider in the operations listed in the regulations. If that same pilot has logged at least 40 hours of flight time in heavier-than-air aircraft, the applicant must have only logged at least three hours of flight time in a glider in the area of operations listed in the regulations to meet some of the minimum training requirements.

To meet the requirements for a commercial glider rating, a glider only pilot must have logged 25 hours as a pilot in a glider and that flight time must include at least 100 flights in a glider as PIC. The regulations CFR §61.129(f) lists the specific training requirements.

But, if you have 200 hours of flight time as a pilot in heavier-than-air aircraft, the rules permit you to add a commercial glider rating to your pilot certificate relatively easy. For example, with only at least 20 flights in a glider as pilot in command, plus the appropriate number of training hours or training flights with an authorized instructor, you only need five solo flights in a glider on the areas of operation listed in CFR §61.129(f)(2). Plus you don't have to take a knowledge test when adding a commercial glider rating if you hold a commercial airplane, rotorcraft, or airship category rating.

You need to review the regulations for all of the specific requirements for each type of glider rating.

Both means of meeting the minimum certification requirements (glider only or add-on rating) include at least three training flights with an authorized instructor within 60 days of the test.

The point of all of this is that it is relatively easy to add, in this case, a glider add on rating to a heavier-than-air aircraft rating. (In the past, we have discussed how easy it is to add a seaplane rating to an airplane certificate.)

Why would you want to add a glider rating?

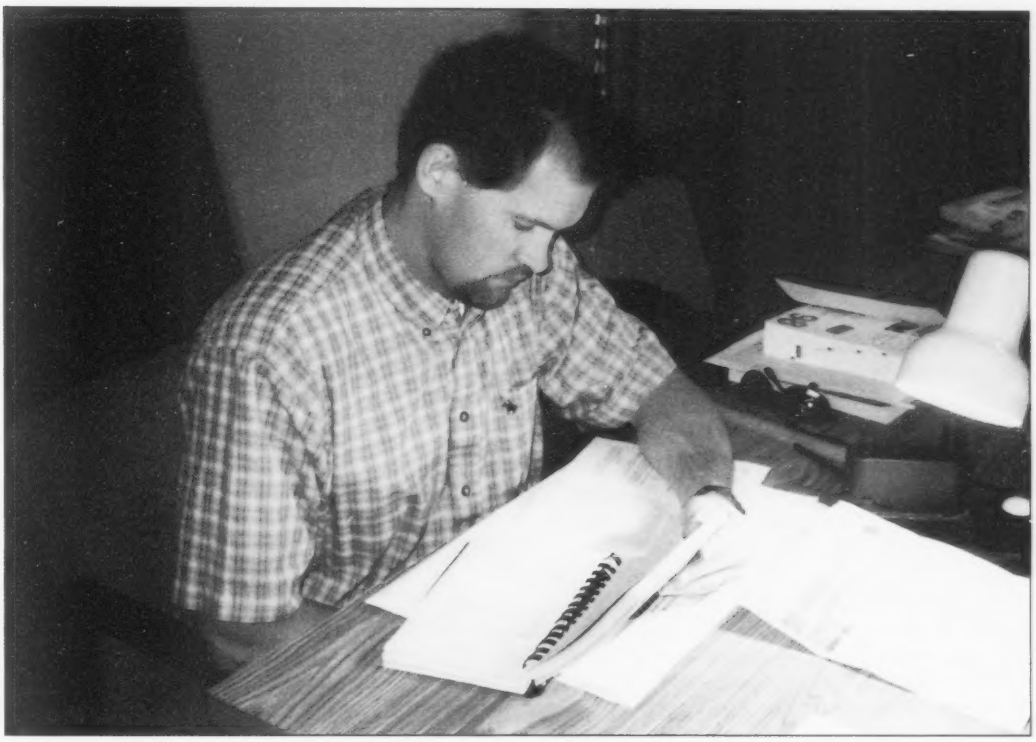
Soaring is pure flying. It is basic stick and rudder flying where smoothness and coordination may mean the difference between gaining altitude in minimal lift conditions or losing altitude. Add in the challenge of getting only one landing per flight for non-motorized gliders, and you begin to appreciate the benefits of learning to fly gliders. Gliders make you think about basic flying skills, the importance of understanding weather and lift, and the value of planning your flight. Flying skills and judgment are important parts of learning to fly gliders. All of which will help make you a better pilot regardless of which type aircraft you currently fly. Although most of us tend to use the terms glider and sailplanes interchangeably, the regulations uses the term glider in outlining the various training requirements. In this article, we will use glider and sailplane to mean the same type of aircraft.

As we said, proficiency is a great reason to start your new year off flying with an add-on glider-rating course. But rather than *FAA Aviation News* repeating FAA recommended ideas, we would rather let our commercial add-on applicant, Richard C. Niehaus, of Galena MD, explain his reasons. First, Niehaus is a B-757 and B-767 rated pilot with a major airline. He has logged more than 11,000 flight hours.

When asked how he got started in flying, he said, "I think the first time I

was in a plane was when I was two weeks old." "My official lessons didn't start until I was about 10 years old." He said he soloed four days after his 16th birthday. When asked why so late instead of on his 16th birthday, he said the weather didn't cooperate.

He said his father was a pilot with an instrument rating who would take him out of school go flying with him. "People thought it was terrible that I would be taken out of school to go flying, but that is how I ended up making my living," he said. His father died when Niehaus was 15. But he said, "By that time the seed was planted, and I definitely had a direction."



Ric Niehaus studies a Schweizer pilot operating handbook prior to the practical test.

In 1985, Niehaus started flying for an airline when he was only 20 years old. He had to wait until he was 23 before he could fly as a captain because he had to wait until he was old enough to meet the minimum age requirement (23) to be eligible for his airline transport pilot certificate.

He is also unique. He not only flies "heavy iron" as the saying goes, but he also flies at the other end of the spectrum. He flies hang gliders. "I would say hang gliding is my number one aviation passion," he said. He has flown a hang glider more than 159 miles in cross-country flight. As he joking said of the six hour and 22 minute flight, "It was non-stop with no refueling." He has also been to more than 14,000 feet MSL in a hang glider.

So, why did he want a glider rating? To take his wife soaring is one reason. Although they have done some tandem hang gliding, he thinks a sailplane is a better option with her. Plus, he said, it was a challenge for him to test his flying skills doing something new. In the case of his glider check ride, the challenge was the FAA's Glider Practical Test Standard.

When asked what advise he could offer others, he said, "Even with flying as often as I do, there are aspects of general aviation that you can become rusty on. Coming out here and doing this type of flying just brings back the joy of why we are doing this in the first place."

If it works for him, it will work for you. Now is the time to think about your glider add-on rating to remove some of that winter rust you may have accumulated.

For more information about learning to flying gliders, you should check Part 61 of the FAA regulations for the knowledge and practical training requirements. You may also want to review the current Glider Practical Test Standards. Then you should visit the Soaring Society of America's Internet website at <www.ssa.org> for detailed information on soaring and how to find the location of a soaring site near you. In case you want to write to the SSA or telephone the organization, its address is P.O. Box 2100, Hobbs, NM 88241-2100. Its telephone number is (505) 392-1177. Its FAX number is (505) 392-8154.

Although many people fly their own sailplane, most people learn to fly sailplanes either in a soaring club setting or at one of the many commercial soaring centers around the country. To start off your new year by learning to soar, contact the club or soaring center nearest you. You too can learn to fly with the great soaring birds of America. Do it today. Shake off that winter rust.

"Can I?"

by Kenneth Reilly

Editor's Note: The article "I versus We," which appeared in the April 2001 Aircraft Maintenance Technology and the July/August 2001 FAA Aviation News, raised a question about whether an FAA certificated mechanic could "legally manufacture" an aircraft part. The following article clarifies this very important issue and sets the records straight on the manufacturing issue raised by "I versus We." In our next issue, "Must I?" will address the owner produced part requirement that "the owner must declare that the part is airworthy and sign and date the entry."

Aviation parts, who can make them? Sounds like an easy question to answer, but in reality it can be complex.

A number of questions have arisen lately regarding whether an individual who holds a Federal Aviation Administration (FAA) airframe and/or powerplant mechanic's certificate can manufacture a part. This matter depends on the meaning of the word "manufacture" and the context in which it is used.

Put simply, during the course of a repair, a mechanic can manufacture a part. It is important to remember that any time you manufacture a part, you need some type of data to go along with it. The data source may be from an aircraft manufacturer's structural repair manual (SRM); FAA Advisory Circular 43.13-1B, Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair; a FAA-designated engineering representative; or from data which you designed and had approved for use by the FAA.

When an A & P mechanic manufactures a part in the course of a repair, is that a part that has been produced for sale? No, the part has been fabricated for the purpose of repairing the aircraft and returning it to service.

Maybe this sounds like I'm just splitting hairs when distinguishing between parts manufactured for sale and those manufactured for repairs. However, as I wrote at the start of this article, the question of manufacturing parts sounds easy, but in reality, it can be quite complex. I do not have enough space to cover all the aspects of manufacturing an aviation part, but I hope that by the end of the article, I have provided a clearer understanding of our responsibilities, as an A & P mechanic, when we produce, manufacture, or fabricate a part during the course of a repair.

Suppose you receive a call to repair a wing that was damaged. After an inspection, you determine that a new skin, two ribs, and a stiffener are required to accomplish the repair (and for the purpose of the article it is not a major repair). The parts will be difficult to obtain since the aircraft model has not been manufactured in 20 years. What can you do? In your stack of repair manuals is the manufacturer's SRM. You flip over to the section covering the wings and find you have the data needed to fabricate the damaged parts. Now you decide to move on to the next step: you need to ensure that you accomplish this repair in accordance with sections 43.13 (a) and (b) of the Federal Aviation Regulations regarding the performance of the work. That is, you are capable of performing the work, the right materials and tools are available, and, equally important, the repair will "...be at least equal to its original or properly altered condition..."

Once the work is completed in accordance with all the requirements, the final step is to complete the paperwork. Yes, all of us enjoy the repair part of a task much more than the paperwork, but the paperwork is just as important and is a requirement of the Federal Aviation Regulations. Documentation records for you and the owner the work that was accomplished. In the words of one FAA counsel, "...recordkeeping memorializes the circumstances..." In the case at hand, your statement would be modeled after the following: "Repaired left-hand wing outer leading edge in accordance with Ace Aircraft SRM, dated xx/xx/xx, pages 90-98, date, name, and certificate number." You have now completed

all tasks and are set to return the aircraft back to service following the work accomplished.

In addition, we find that work accomplished in compliance with Part 43 by a mechanic certificated under Part 65 of the Federal Aviation Regulations assures quality control for the part fabricated in the course of the repair.

Another question might come to mind, is this part considered an "owner-produced part" or a part fabricated in the course of repair? In the scenario I described above, I would consider it the latter. If the parts were fabricated for an owner who planned to install them at a later date or by someone else, then the requirements for an "owner-produced part" must be followed, since the owner must somehow be part of the process. The owner, in this instance, would have more of a part than simply being a requester for fabricating services. The FAA has defined an "owner-produced part" as one in which the owner has had control in the design, manufacture, or quality of the part.

Before I conclude this column, I would like to credit the FAA's Chief Counsel's Office for its guidance in the interpretation of this simple, but complex, question of just who can manufacture aviation parts. Sometimes we forget to give credit to those behind the scenes who work diligently in supporting our efforts to respond to your important questions.

I believe this information has clarified some of the confusion over whether, in the course of maintenance, an airframe and/or powerplant mechanic can produce a part. When carrying out a repair, it is essential to remember to proceed in accordance with acceptable or approved data that complies with the requirements of Part 43 performance rules. ✚

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MEDICAL stuff

Hearing and Noise in Aviation

HEARING

Anatomy and Physiology of the Auditory System

The term *hearing* describes the process, function, or power of perceiving sound. Hearing is second only to vision as a physiological sensory mechanism to obtain critical information during the operation of an aircraft. The sense of hearing makes it possible to perceive, process, and identify among the myriad of sounds from the surrounding environment.

The auditory system consists of the external ear, ear canal, eardrum, auditory ossicles, cochlea (which resembles a snail shell and is filled with fluid), and the auditory nerve.

Ambient sound waves are collected by the external ear, conducted through the ear canal, and cause the eardrum to vibrate. Eardrum vibration is mechanically transmitted to the ossicles, which, in turn, produce vibration of a flexible window in the cochlea. This vibration causes a pressure wave in the fluid located inside the cochlea, moving thousands of hair-like sensory receptors lining the inner walls of the cochlea. The movement of these receptors resembles the gentle movement of a crop field caused by the wind. The stimulation of these sensors produces an electrical signal that is transmitted to the brain by the auditory nerve. This signal is then processed by the brain and identified as a particular type of sound.

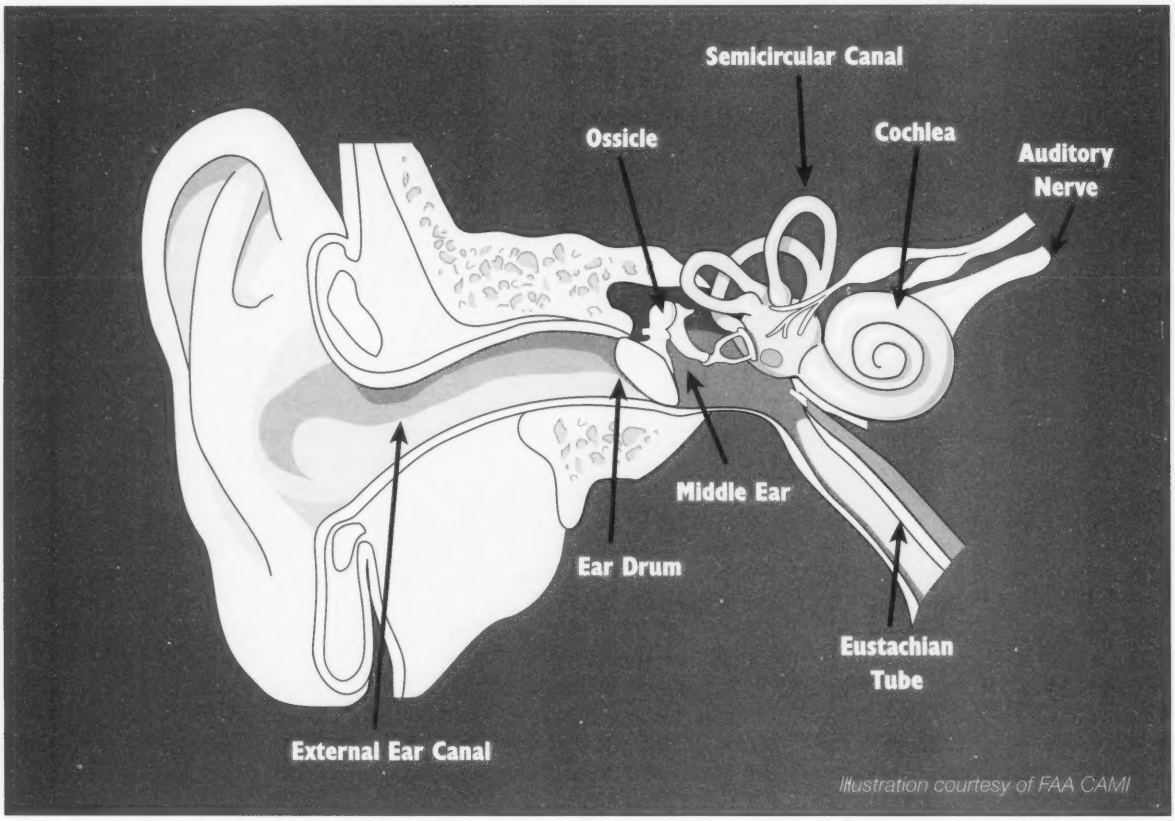
SOUND

The term *sound* is used to describe the mechanical radiant energy that is transmitted by longitudinal pressure waves in a medium (solid, liquid, or gas). Sound waves are variations in air pressures above and below the ambient pressure. From a more practical point of view, this term describes the sensation perceived by the sense of hearing. All sounds have three distinctive variables: frequency, intensity (level), and duration.

Frequency. This is the physical property of sound that gives it a pitch. Since sound energy propagates in a wave-form, it can be measured in terms of wave oscillations or wave cycles per second, known as hertz (Hz). Sounds that are audible to the human ear fall in the frequency range of about 20-20,000 Hz, and the highest sensitivity is between 500 and 4,000 Hz. Sounds below 20 Hz and above 20,000 Hz cannot be perceived by the human ear. Normal conversation takes place in the frequency range from 500 to 3,000 Hz.

Intensity. The correlation between sound pressure level and loudness. The decibel (dB) is the unit used to measure sound pressure levels. The range of normal hearing sensitivity of the human ear is between -10 to +25 dB. Sounds below -10 dB are generally imperceptible. A pilot who cannot hear a sound unless its level is higher than 25 dB (at certain frequencies) may already be experiencing hearing loss.

Duration. Determines the quality of the perception and discrimination of



a sound, as well as the potential risk of hearing impairment when exposed to high level sounds. The adverse consequences of a short-duration exposure to a loud sound can be as bad as a long-duration exposure to a less intense sound. Therefore, the potential for causing hearing damage is determined not only by the duration of a sound but also by its level.

NOISE

The term *noise* refers to a sound, especially one which lacks agreeable musical quality, is noticeably unpleasant, or is too loud. In other words, noise is any unwanted or annoying sound. Categorizing a sound as noise can be very subjective. For example, loud rock music can be described as an enjoyable sound by some (usually teenagers), and at the same time described as noise by others (usually adults).

Sources of Noise in Aviation. The aviation environment is characterized by multiple sources of noise, both on the ground and in the air. Exposure of pilots to noise became an issue following the introduction of the first powered aircraft by the Wright brothers and has been a prevalent problem ever since. Noise is produced by aircraft equipment powerplants, transmission systems, jet efflux, propellers, rotors, hydraulic and electrical actuators, cabin conditioning and pressurization systems, cockpit advisory and alert systems, communications equipment, etc. Noise can also be caused by the aerodynamic interaction between ambient air (boundary layer) and the surface of the aircraft fuselage, wings, control surfaces, and landing gear. These auditory inputs allow pilots to assess and monitor the operational status of their aircraft. All pilots know the sounds of a normal functioning aircraft. On the other hand, unexpected sounds or the lack of them, may alert pilots to possible malfunctions, failures, or hazards. Most pilots have experienced a cockpit or cabin environment that was so loud that it was necessary to shout to be heard. These sounds not only make the work environment more stressful but can, over time, cause permanent hearing impairment. However, it is also important to remember that individual exposure to noise is a common occurrence away from the

aviation working environment—at home or work, on the road, and in public areas. The effects of pre-flight exposure to noise can adversely affect pilot in-flight performance.

Types of Noise

Steady: Continuous noise of sudden or gradual onset and long duration (more than one second). Examples: aircraft powerplant noise, propeller noise, and pressurization system noise. According to the Occupational Safety and Health Administration (OSHA), the maximum permissible continuous exposure level to steady noise in a working environment is 90 dBA for 8 hours (dB, as measured on the A scale of a sound-level meter).

Impulse/blast: High-level noise pulses of sudden onset and brief duration (less than one second). Examples: firing a handgun, detonating a firecracker, backfiring of a piston engine, high-volume squelching of radio equipment, and a sonic boom caused by breaking the sound barrier. The eardrum may be ruptured by high levels (140 dB) of impulse/blast noise.

Effects of Noise Exposure

Chart 1

Source of Sound/Noise	Level (dB)
Whispered Voice	20-30
Urban Home, Average Office	40-60
Average Male Conversation	60-65
Noisy Office, Low Traffic Street	60-80
Jet Transports (Cabins)	60-88
Small Propeller Plane (Cockpit)	70-90
Public Address (PA) Systems	90-100
Busy City Street	80-100
Single Rotor Helicopter (Cockpit)	80-102
Power Lawn Mower, Chainsaw	100-110
Snowmobile, Thunder	110-120
Rock Concert	115-120
Jet Engine (Proximity)	130-160

Physiologic

Ear discomfort: May occur during exposure to a 120 dB noise.

Ear pain: May occur during exposure to a 130 dB noise.

Eardrum rupture: May occur during exposure to a 140 dB noise.

Temporary hearing impairment: Unprotected exposure to loud, steady noise over 90 dB for a short time, even several hours, may cause hearing impairment. This effect is usually temporary and hearing returns to normal within several hours following cessation of the noise exposure.

Permanent hearing impairment: Unprotected exposure to loud noise (higher than 90 dB) for eight or more hours per day for several years, may cause a permanent hearing loss. Permanent hearing impairment occurs initially in the vicinity of 4,000 Hz (outside the conversational range) and can go unnoticed by the individual for some time. It is also important to remember that hearing sensitivity normally decreases as a function of age at frequencies from 1,000 to 6,000 Hz, beginning around age 30.

Psychologic

Subjective effects: Annoying high-level noise can cause distraction, fatigue, irritability, startle responses, sudden awakening and poor sleep quality, loss of appetite, headache, vertigo, nausea, and impair concentration and memory.

Speech interference: Loud noise can interfere with or mask normal speech, making it difficult to understand.

Performance: Noise is a distraction and can increase the number of errors in any given task. Tasks that require vigilance, concentration, calculations, and making judgments about time can be adversely affected by exposure to loud noise higher than 90 dB.

Chart 2

Noise Level (dBA)	Exposure Limit (hrs. per day)
90	8
92	6
95	4
97	3
100	2
102	1.5
105	1
110	.5
115	.25

HOW TO PROTECT YOUR HEARING

Limiting duration of exposure to noise. OSHA-established permissible noise exposure limits for the workplace (including the cockpit of an aircraft, see Chart 2).

Use Hearing Protection Equipment. If the ambient noise level exceeds OSHA's permissible noise exposure limits, you should use hearing protection devices—earplugs, earmuffs, communication headsets, or active noise reduction headsets. Even if an individual already has some level of permanent hearing loss, using hearing protection equipment should prevent further hearing damage. These protection devices attenuate noise waves before they reach the eardrum, and most of them are effective at reducing high-frequency noise levels

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FAA Advises Air Travelers on Airp

On October 8, the FAA issued the following tips to help air travelers meet and assist the heightened security measures implemented since the September 11 terrorist attacks. Please note that air travelers are limited to one carry-on bag and one personal item on all flights.

Allow extra time:

- The heightened measures require more time to properly screen travelers. Travelers should contact their airline to find out how early they should arrive at the airport.
- Take public transportation to the airport if possible. Parking and curbside access is likely to be controlled and limited.
- Curbside check-in is available on an airline-by-airline basis. Travelers should contact their airline to see if it is in place at their airport.

Check-in:

- A government-issued ID (federal, state or local) is required. Travelers may be asked to show this ID at subsequent points, such as at the gate, along with their boarding passes.
- Automated check-in kiosks are available for airlines that have appropriate security measures in place. Travelers interested in this option should check with their airline.
- E-ticket travelers should check with their airline to make sure they have proper documentation. Written confirmation, such as a letter from the airline acknowledging the reservation, may be required.

Screener checkpoints:

- Only ticketed passengers are allowed beyond the screener checkpoints, except for those with specific medical or parental needs.
- Each traveler will be limited to one carry-on bag and one personal bag (i.e., purse or briefcase).
- All electronic items, such as laptops and cell phones, may be subjected to additional screening. Be prepared to remove your laptop from its travel case so that both can be X-rayed separately.
- Limit metal objects worn on person.
- Travelers should remove all metal objects prior to passing through the metal detectors in order to facilitate the screening process.

Items prohibited from aircraft cabins. The following items must be placed in, or transported as, checked baggage or risk confiscation:

- Knives of any length, composition or description
- Cutting instruments of any kind and composition, including carpet knives and box cutters (and spare blades), any device with a folding or retractable blade, ice picks, straight razors, metal scissors, and metal nail files
- Corkscrews
- Baseball/softball bats
- Golf clubs
- Pool cues
- Ski poles
- Hockey sticks
- When in doubt, transport item in checked baggage

Permitted items:

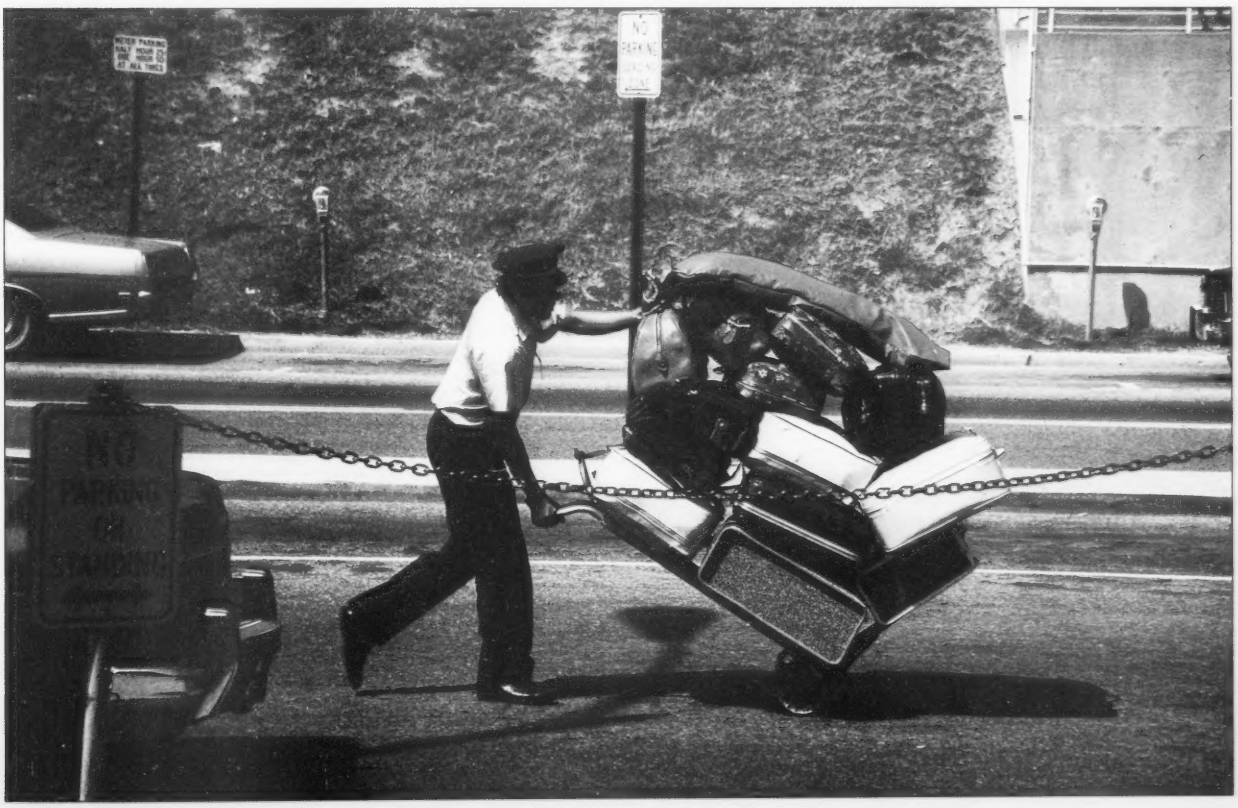
- Walking canes and umbrellas (once inspected to ensure prohibited items are not concealed)
- Nail clippers
- Safety razors (including disposable razors)
- Syringes (with documented proof of medical need)
- Tweezers
- Eyelash curlers

At the gate:

- Travelers must be prepared to present a valid photo identification card, along with their boarding pass.
- Travelers and their bags may be subjected to additional screening.

At all times:

- Control all bags and personal items.
- Report any unattended items in the airport or aircraft to the nearest airport or airline personnel.



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above 1,000 Hz. It is very important to emphasize that the use of these devices does not interfere with speech communications during flight because they reduce high-frequency background noise, making speech signals clearer and more comprehensible.

Earplugs. Insertable-type earplugs offer a very popular, inexpensive, effective, and comfortable approach to provide hearing protection. To be effective, earplugs must be inserted properly to create an air-tight seal in the ear canal. (The wax-impregnated, moldable polyurethane earplugs provide an effective fit for most users and can provide 30 to 35 dB of noise protection across frequency bands.)

Communication headsets. In general, headsets provide the same level of noise attenuation as earmuffs, and are also more easily donned and removed than earplugs, but the microphone can interfere with the donning of an oxygen mask.

Active noise reduction headsets. This type of headset uses active noise reduction technology that allows the manipulation of sound and signal waves to reduce noise, improve signal-to-noise ratios, and enhance sound quality. Active noise reduction provides effective protection against low-frequency noise. The electronic coupling of a low-frequency noise wave with its exact mirror image cancels this noise.

Combinations of protection devices. The combination of earplugs with earmuffs or communication headsets is recommended when ambient noise levels are above 115 dB. Earplugs, combined with active noise reduction headsets, provide the maximum level of individual hearing protection that can be achieved with current technology.

SUMMARY

- Hearing is second only to vision as a sensory mechanism to obtain critical information during the operation of an aircraft.
- All sounds have three distinctive variables: frequency, intensity, and duration.
- Normal conversation takes place in the frequency range from 500 to 3,000 Hz.
- Daily exposure to average noise levels higher than 90 dB can cause hearing impairment. This can go unnoticed initially because it occurs in the vicinity of 4,000 Hz (outside the conversational range).
- If the average ambient noise level reaches 90 dBA, it is required to use hearing protection equipment to prevent hearing impairment.
- Exposure to loud noise before flying (at home, while driving, at a party, etc.) can be as harmful as exposure to aircraft noise.

This article comes from a brochure AM-400-98/3 in the MEDICAL FACTS FOR PILOTS series. It was written by Melchor J. Antuñano, M.D., and James P. Spanyers and prepared by the FAA Civil Aerospace Institute, Aeromedical Education Division, AAM-400, P.O. Box 25082, Oklahoma City, OK 73125

CALENDAR OF EVENTS

January 18-20 - 2002 Great Lakes International Aviation Conference, East Lansing, MI

A weekend of top-flight training (including IA renewal), aviation tales (Dr. Jerry Cockrell and Bob Hoover), and comradery awaits participants at the Michigan State University's Kellogg Hotel and Conference Center. Information, including registration form, is available at <www.mdot.state.mi.us/aero/gliac.htm>. For more information, contact Philip Tartalone at MDOT's Bureau of Aeronautics at <gliac@mdot.state.mi.us> or (517) 335-9880.

March 13-15 - 13th Annual International Women in Aviation Conference, Nashville, TN

The conference will be held at the Opryland Hotel. Speakers include Secretary of Transportation Norman Mineta, astronauts Hoot Gibson and Rhea Seddon, and author Patricia Cornwell. For more information, contact WAI at (386) 226-7996 or <www.wai.org>.

The History of "Who Wants To Be An Aire-man?"

by Randy A. Williams

A meeting was held at the Fort Lauderdale, Flight Standards District Office (FSDO-17) to discuss the problem of a continued drop in attendance at the FSDO sponsored safety presentations. Several members from the FSDO Management and the Safety Program Teams were present to brainstorm on new ways that the FSDO could "Sell" aviation safety to the public. The FSDO's Safety Program was in a rut and something needed to be done.

One of the problems that the Safety Program Managers were experiencing was attendance at the meetings. You could expect several aviation safety counselors, a few certified flight instructors, and some aviation school students to be there. If attendance at a particular safety meeting meant credit for inspection authorization or certified flight instructor renewal, a few more may show up. However, the problem was that at every meeting the same faces kept showing up. How could new airmen be encouraged to attend? Showing the same videotapes and sermonizing about runway incursion prevention was doing little to attract additional attendance.

The Genesis

During the brainstorming meeting, one of the FSDO unit supervisors, Howard Hollis, mentioned that several years prior, the FSDO had hosted an annual Inspection Authorization renewal meeting. To bolster attendance at these meetings, inspectors would host a friendly trivia competition between willing participants. This competition was called "*FSDO Jeopardy.*" Airmen enjoyed coming together to test their aviation trivia knowledge against each other. To reward the most knowledgeable contestants, a meeting sponsor donated small prizes like tee shirts and hats. Howard suggested that perhaps it was time for the game show format to be resurrected ... but with some modifications. At the time of the brainstorming session, the number one program on television was ABC's "*Who Wants To Be A Millionaire?*" Perhaps a safety meeting conducted similar to this game show would attract more attention from local airmen.

The Concept

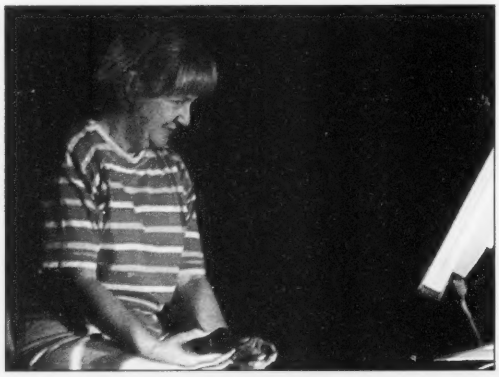
A name was given to this venture; "*Who Wants To Be An Aire-man?*" The term "Aire-man" (derived from the word millionaire) was decidedly a better choice than "airman" since no one wants to give the impression that FAA airman certificates were won in a contest. ANY airman, whether certificated or not, would be able to compete with their peers to win valuable prizes that were to be donated by local area sponsors. If a contestant wants to play as a mechanic, the "Hot Seat" questions would be about aviation maintenance. If a contestant wants to play as a pilot, the trivia questions would be pilot oriented.

The concept of conducting an "All Airmen" safety meeting had never been attempted. Traditionally, the FAA Safety Program produced safety meetings that where directed towards a specific group of airmen. Additionally, the opportunity existed to address a broader range of topics at a single meeting. The possibility to address all of FAA Administrator Garvey's "*Safer Skies Agenda*" items in a single safety meeting had also never been done.

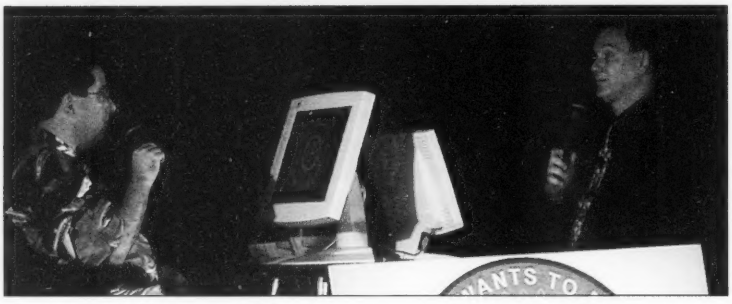
With the blessings of the FSDO Manager, Bill Weaver, and the cooperation of Buena Vista Television (the producers of ABC's game show), the Safety Program Team began to explore the feasibility of putting together such an undertaking. Duties were assigned and timetables were developed to allow introduction of the project in January 2001. Cary Mendelsohn, the Safety Program Manager for Operations, oversaw the advertisement, sponsorship, and venue for the program. Randy Williams, the Safety Program Manager for Airworthiness, dealt with the graphic arts, technical production, and question development for the game.

The Evolution

The question of venue became the next issue to address. The site for these meetings needed to be carefully considered. What was needed was a hospitable location with adequate seating, a large projection screen, and a public address system that could be obtained free of charge. Cary found a more-than-adequate location ... a movie theater. The Muvico Movie



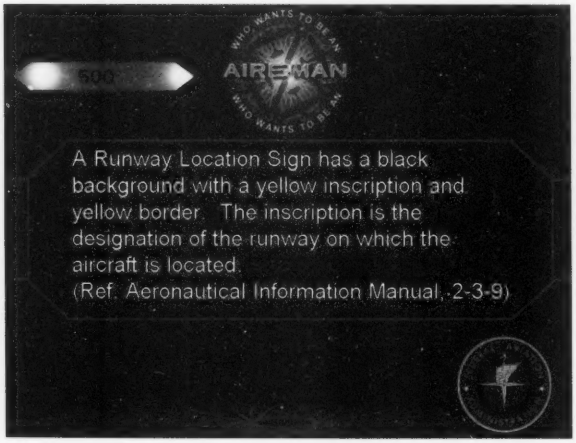
Top: Winner Tina Chesley studies the question before answering. The "Hot Seat" contestant Richard Kane and game MC Cary Mendelsohn each have a flat screen monitor to view the question and answers.

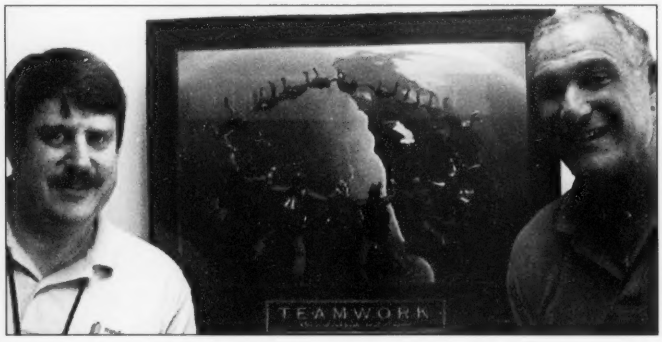


Theater in Boca Raton proved to be the perfect location. Co-located at the Boca Raton Airport, which is centrally located in FSDO-17's district, the Muvico Theater is accessible by plane, train, or automobile. The management of the Muvico Theater agreed to host the "*Who Wants To Be An Aire-man?*" seminar in a 330-seat auditorium, for two hours, one Saturday morning each month ... complete with a buffet breakfast. The accessibility of the site, the time frame of the seminar, and the hospitality of the theater all contribute to encouraging more airmen to attend.

Such a unique event requires some specialized advertising. In addition to the standard FAA mailers that originate from Oklahoma City, Cary utilizes electronic formats such as web site and e-mail advertising. Special posters are designed, printed, and hand-distributed by the Safety Program Team to facilities throughout FSDO-17's district. The "*Who Wants To Be An Aire-man?*" safety seminars are also advertised on public access television, while several local newspapers have run articles about the unique seminars. A few of the program sponsors have taken on the financial responsibility to acquire some of the more "creative" promotional products, such as custom-made key chains and tee shirts. Proper advertisement is absolutely necessary to attract airmen to safety meetings that they have not been attending.

ABC's game show rewards its contestants with cash prizes ranging from $100 to $1 million. Since the FAA is not likely to post a $1 million jackpot, sponsors are needed to pledge valuable prizes. Initially sponsorship for the events came slowly, but Cary persisted. The first sponsors that agreed to pledge prizes were not even from the aviation industry. Restaurant and other small business owners stepped forward to support their community, realizing aviation safety affects everyone. As the word spread about the program, several purely aviation-oriented businesses pitched in prizes without solicitation. Presently, Cary has documented over $50,000 worth of pledged prizes ranging from golf balls to round trip airfare to a Garmin GPS. To date "*Who Wants To Be An Aire-man?*" contestants have won several thousand dollars worth of pledged prizes. Offering valuable prizes unquestionably helps to fill seats at a safety meeting.


WHO WANTS TO BE AN
AIREMAN
WHO WANTS TO BE AN
500
A Runway Location Sign has a black background with a yellow inscription and yellow border. The inscription is the designation of the runway on which the aircraft is located.
(Ref. Aeronautical Information Manual, 2-3-9)



For questions above 500 points, after the contestant answers the question whether right or wrong, an explanation and reference for the question is displayed on the screen. Fort Lauderdale FSDO Safety Program Managers Randy Williams (Maintenance) and Cary Mendelsohn (Operations).

A distinctive theme for "*Who Wants To Be An Aire-man?*" needed to be developed that would help associate it with the format of the popular ABC game show, but provide it with certain characteristics of its own. The development of a logo was necessary. Randy created a logo that has become the focal point for all of the advertisement that is central to these seminars. The "*Who Wants To Be An Aire-man?*" logo can be found on everything from key chains to tee shirts, in addition to the posters, flyers, and the Internet (visit www.faa.gov/fsdo/fll for more info). In order to make the program more familiar, the "*Who Wants To Be An Aire-man?*" logo has become a recognized symbol of aviation safety in the local community.

To compete with the "flash" of the ABC game show, "*Who Wants To Be An Aire-man?*" needed a similar but distinctive game interface that could be projected on the large screen. Randy went to work developing an interface that was similar to the ABC game show, but maintained its own characteristics. A "Fastest Finger" round, where four potential contestants are asked one basic aeronautical trivia question, decides who will occupy the "*Hot Seat.*" In the "*Hot Seat,*" contestants are asked several progressively difficult aviation trivia questions. Each "Hot Seat" contestant and the show's host (Cary) have a flat screen monitor to view the question and answers. The audience views along by a projection on the large screen. The auditorium's public address system is used to broadcast the several microphones, including the host's and contestants', and the background music that is associated with the game interface. When airmen come to these seminars, they tend to forget that they are at a FAA meeting because of the professional production feel of the show. It is much easier to educate when the audience is entertained.

This boy scout won the fastest finger contest.

In order to keep the questions entertaining and fresh, Randy continuously develops questions that are obtained from a variety of sources. The answer for each question can be found by utilizing links on the Fort Lauderdale FSDO's web site. The question is the tool that is used to educate. For questions above 500 points, after the contestant answers the question whether right or wrong, an explanation and reference for the question is displayed on the screens. To ensure that the audience pays attention, the contestant may call upon them, one time, to help answer a question. The contestant may wish to get some assistance with a question from a friend (this encourages airmen to bring a friend with them to the safety meeting). The contestant may want the computer to take away two of the wrong answers. These "Lifelines" aid the contestant in getting as far along as possible. The more questions asked, the more education potential.

As the audience watches their comrades compete for valuable prizes, they learn new information about such topics as Runway Incursion Prevention, Aircraft Survival Equipment, and Engine Failures. Additionally, when pilot/contestants try their hand at the "*Hot Seat,*" they are also asked questions on subjects related to Weather, Aeronautical Decision Making, Approach to Landing, Controlled Flight into Terrain, and Loss of Control. These subject areas are from FAA Administrator Garvey's "*Safer Skies Agenda*" items. So far there have been dozens of "*Hot Seat*" contestants ranging in age from a Boy Scout to an 83-year young ground instructor. In addition to every "*Hot Seat*" contestant having won a prize, each of them left insisting that they had learned something new.

The Final Answer

For the first time, in a long time, attendance is up dramatically. Not only is the "*Who Wants To Be An Aire-man?*" seminars attracting a larger audience, each of the safety meetings is digitally recorded by the *Boca Raton Educational Television* (BRET) crew and is broadcast several times a month to the local community. *American Flyers* also broadcasts the seminar on their web site that can be seen by anyone worldwide or visit Fort Lauderdale FSDO's web site at <www.faa.gov/fsdo/fll>. A VHS tape of each of the shows is available from the FSDO.

The "*Who Wants To Be An Aire-man?*" seminars have proven to be highly successful "All Airmen" safety meetings. It is easy to maintain the attention of such a diverse group of airmen when the material comes across in an entertaining format. In fact, the program is so successful that this past November the Fort Lauderdale FSDO and Royal Caribbean teamed up to present "Who Wants to Be an Aire-Man?" on a three-day Bahamas cruise. For additional encouragement, any pilot who attends a meeting may receive credit toward the "*Wings*" program, safety meeting annual requirement. Any Aviation Maintenance Technician who attends a meeting may receive one hour of credit toward the FAA Policy and Procedures requirement of the AMT Award program.

Runway Incursions and Aviation Related incidents and accidents per flight hour by local airmen are currently at an all-time low in the Fort Lauderdale area. If there is any doubt that the "*Who Wants To Be An Aire-man?*" seminars have contributed to this, simply "ask the audience" if they learned anything new.

Randy Williams is the Safety Program Manager for Maintenance at the Fort Lauderdale (FL) Flight Standards District Office.

1-800-WXBRIEF

Use It Or Lose It!!

"Aviation Safety is our Business"

Some Tips of the Trade

by H. Dean Chamberlain

During a recent contact with the St. Petersburg, Florida, Automated Flight Service Station (AFSS), James A. George, a briefer who helped me, pointed out some important things that all pilots should remember when talking to a Flight Service Station briefer.

In the case of the St. Petersburg AFSS, the AFSS uses 44 communications frequencies in its area of responsibility. To speed up all radio transmissions, pilots should report the frequency they are either using or the one they want the AFSS briefer to respond on whenever contacting a Flight Service Station. This not only speeds up communications for the person requesting information, it allows other pilots to communicate faster when they don't have to wait to share the same frequency.

Another important point discovered during the visit to both the AFSS and the Tampa Flight Standards District Office, was how air traffic controllers and AFSS briefers come to depend upon hearing a certain voice with a certain aircraft call sign. When two people in an aircraft, whether two pilots or a pilot and someone else operating the radio, respond to a controller or briefer, it takes a moment for the controller or briefer to associate the new voice with the call sign. Not a major issue, but an interesting piece of trivia that may explain why a controller may be a little slower in responding to a new voice using the same call sign. The controller might just need a moment to remember the call sign as one being worked instead of thinking he or she is talking to a new aircraft.

For those pilots flying in the St. Petersburg AFSS area, George said the facility has new weather information available. The Southern Region purchased expanded weather services for the St. Pete AFSS, so if you have not contacted the AFSS recently, be aware that the briefers can now provided even more information than in the past. The good service just got better.

All pilots flying in central and south Florida need to be especially alert because of the number of student pilots training in the area. With its great year-round weather, Florida has a significant number of flight schools and colleges and universities with flight training programs. As a result, there is a significant number of student training flights conducted daily across the state. The problem is in addition to the actual numbers involved, some of the student pilots and a few of the flight instructors may not be fluent in English. Consequently, it is important for all pilots to know and abide by all of the applicable regulations and recommended safe operating procedures. Using proper phraseology and following recommended communications procedures at both towered and non-towered airports are especially important. In the recent past, Florida has seen more than its share of mid-air collisions and runway related accidents. The fact that an airport has an operating control tower is not a 100 percent guarantee that all aircraft on or near the airport will not make a mistake that could result in an incident or accident.

Finally, as George pointed out, a flight plan is one of the best safety items a pilot can have. I acquired from George a bumper sticker that pointed out an important truism in government. The sticker read 1-800-WXBRIEF, Use It or Lose It. The toll-free 800-telephone number is the best way for pilots to contact a Flight Service Station for all of the weather information and flight planning services a pilot needs to plan a flight. It also is a reminder that if the services are not used, pilots could possibly lose the services as politicians continue to look for ways to cut unwanted or unused services. Use It or Lose It: It is your call.

Flying with the Great American Coach Company

by M. Kay Fulkerson

On August 1, 2001, the Baton Rouge Flight Standards District Office (FSDO) in conjunction with the Baton Rouge Air Traffic Control Tower (ATCT) tried a new approach to Operation Rain Check. *[Editor's Note: Operation Rain Check is a program where pilots can tour their local air traffic facility to get a better understanding of how the facility works and the services available at the facility.]*

Airport signs and markings have always been a problem for pilots, and pilots must keep up with the latest changes in signage. A pilot is like a doctor or lawyer. He or she must read all of the available information in order to keep up with all of the latest changes in aviation including the changes in signage and markings. A pilot's aviation knowledge capacity can be compared to a computer—it can't function correctly unless it is constantly upgraded.

A casual survey of the local Baton Rouge pilots revealed that some avoided flying into controlled airports because of all of the recent changes in airport signs and markings. The survey revealed that most pilots do not keep up with the changes. It became apparent that the only way most pilots try to keep up to date is through safety seminars and Operation Rain Check. The problem is most Operation Rain Checks have become stereotyped. In other words, they consist of a talk about the tower operation, the radar room, and what Flight Service is doing. They had become boring.

Operation Raincheck began in the classroom with a quiz and then a video on airport signage and markings.

In Baton Rouge, we decided to do something different. I suggested to Brett Seeger, the Baton Rouge Tower Manager, that we try a new approach. We decided to give our next group of Operation Rain Check participants the new *FAA Airport Signs & Marking Quiz* to test their knowledge of airport signs and markings. Then we showed them the new *Airport Signs, Markings, and Procedures: Your Guide to Avoiding Runway Incursions* videotape.

If this sounds like your typical Operation Rain Check discussion, you're right. But wait a moment—there is more.

We used what we think is an innovative and interesting way to show them the current signage at Baton Rouge Metropolitan Ryan Field. We took them on a bus tour of the airport. Yes, a bus tour of an airport. The

Instead of the usual tour of the tower, this Operation Raincheck continued with a bus tour of the airport's runways and taxiways.

Great American Coach Company supplied a bus for the 51 pilots who attended the meeting. A tower controller on board the bus explained each airport sign or marking as the coach "taxied" down the taxiway. At the end of the runway, the Great American Coach was "cleared" to enter the runway as if it was an aircraft taking off. The controller explained each sign and marking as the bus passed it and answered any questions about the meaning of the sign or marking. The controller also kept in constant radio contract with the tower to ensure the safety of the bus on the airport.

At the end of the tour, the bus driver got into the spirit of the program by thanking everyone for "flying" with the Great American Coach Company.

After "deplaning" from the bus, the pilots reviewed their Airport Signs & Markings Quiz again to recheck their answers.

Everyone's comments were favorable. They were ecstatic that such a dry topic as airport signage and markings had been turned into a fun learning process. As some of the pilots said, they are so busy landing the airplane it is hard to focus on the airport signs and markings. They felt that they are pressured to get off the runway and taxiway, that they really don't have time to comprehend the full meaning of each sign or marking they see. Whether you are a new private pilot or a new airline pilot, signage at a major metropolitan airport can be confusing if you are a first time arrival.

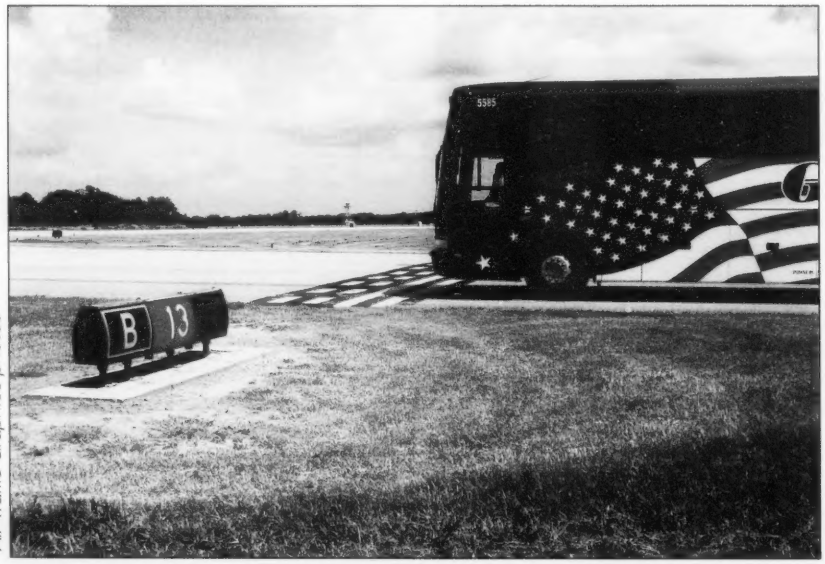
The screening test, video, and bus tour proved such a success at Baton Rouge, that other Louisiana airports expressed an interest in a similar type training session.

Flying is fun. Let's keep it safe.

±

Editor's Note: Although this program was done last summer before the increased security restrictions were mandated for the nation's airports, with the proper security checks, this type of program can still be done at your local airport with the right coordination between your local FSDO, Aviation Safety Program Manager, local ATCT Manager, and airport management.

M. Kay Fulkerson is the Baton Rouge FSDO Safety Program Manager.



Air Traffic Graphics photos

RUNWAY SAFETY CORNER

Airport Signs & Markings Quiz

When you see a sign like this on the airport, do you know what it is trying to tell you? Test your signage knowledge. Unlike the test giving during the Operation Raincheck's Great American Coach Tour, we are only giving you six choices—they had 10 questions and 30 possible answers.

Match each airport sign or marking to its description. Answers to the quiz are on page 28.

Air Traffic Graphics photo

A. Used to indicate you're about to cross a runway approach or departure path.

B. Identifies the exit boundary for the ILS critical area.

C. Tells you the runway or taxiway you are on.

D. Shows places you should not taxi an aircraft.

E. Identifies the exit boundary for runway safety area or runway approach.

F. Sign giving you directions to a runway, taxiway, or other airport destination.

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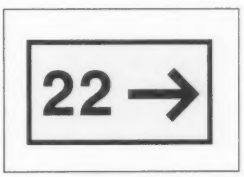

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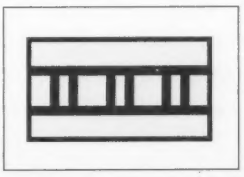

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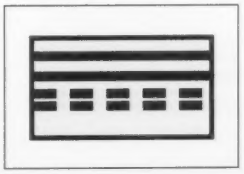

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Creating Emergencies By Practicing Emerger

by Tom Jones

When was the last time you practiced emergency descents? Was it when you were training for a pilot certificate, recurrent training, or just for fun? The Practical Test Standards (PTS) for pilot certification normally requires a demonstration of an emergency descent. One of the requirements stated in the tasks is proper planning.

Where does that planning start, and where does it stop? Most pilots are concerned with following the procedures, such as reducing power, extending landing gear, flaps, spoilers, etc., and getting lower as fast as possible. Of course, it requires planning to know what speeds to use and what procedures are required and/or suggested by the manufacturer. How often do we consider what the engine manufacturer requires? From the reports we receive from FAA authorized maintenance technicians, not a lot of consideration is given to the engine requirements. Considering engine performance and operation is a part of that planning.

All pilots are familiar, or at least should be, with the *Airplane Flying Handbook (*FAA-H-8083-3), formerly the *Flight Training Handbook (*AC-61-21A). The book is well written, and contains up-to-date information and graphics. On page 12-2 there is a discussion of emergency descents. In particular, it states that the emergency descent should be made at the maximum airspeed consistent with the procedure used. A little further along, it unobtrusively states: "In airplanes with piston engines, prolonged practice of emergency descents should be avoided to prevent excessive cooling of the engine cylinders." Could excessive speed and prolonged descents be adding to your maintenance expense?

If we are supposed to avoid prolonged descents at a low power setting, how do we learn how to save our engines in the practice or training environment? Do the engine manufacturers have information that we pilots need? For one thing, they know that if an engine is cooled too rapidly, often called "shock-cooling," engine problems will occur. Notice I said *will occur*. Not maybe or might or may. Damage *will* occur.

Some pilots may not fully understand what I mean by shock cooling. It is something like when you are working on a hot day and decide to eat an ice cream cone or drink a frozen beverage. You're hot, and you decide to gulp down the beverage or eat the ice cream really fast before it and you melt. If you've ever done that, you know that you get a really sharp headache instantly. Something like that happens to your engine. Except the pain doesn't go away, it causes cracks in the cylinders, the exhaust system, or both. The major problem is that the engine does not cool down uniformly. You have hot engine parts and cold engine parts. As we all know from basic physics, heat expands and cold retracts. So you have a cylinder that cools down rapidly because of low combustion going on inside and increased airflow through the cooling fins. You have an engine case that is still hot, because no one told the main case to cool down quickly enough to match the cylinders. Then, you have cool cylinders, a hot engine, retracted cylinders, and an expanded engine case—that means something has to give. The cylinder is the most likely place or in some cases the exhaust system as well as the cylinders. Actually the main thing that gives is your bank account.

So, where do we find the recommendations made by the manufacturers? One good place is your maintenance technician, ask him/her for guidance on proper procedures for engine operation and maintenance concerns or contact the manufacturer. One engine manufacturer, Textron/Lycoming, publishes guidance called "Service Instructions." For example, their Service Instruction No. 1094D, printed on March 25, 1994, concerns leaning procedures. On page two it states, "At all times, caution must be taken not to shock cool the cylinders. The maximum recommended temperature change should not exceed 50°F per minute." A lot of wisdom in a really out-of-the-way publication. Shouldn't that kind of guidance and information be a part of *every* piston engine operating manual? And shouldn't every student pilot be taught that kind of information? I believe *all* pilots should be familiar with this information!

So, how do we pilots use this information? I suggest that whenever you practice emergency descents you learn just how much power reduction can be accomplished to reduce the power sufficiently to descend in accordance with good practices. Remember the PTS requires the pilot to exhibit knowledge of the elements related to an emergency descent and to demonstrate proper planning. Couldn't we consider part of this task to understand exactly how your engine operates? For example, if you were flying an aircraft such as a Cessna 421 or a Beechcraft BE-80 (Queen Air) and you were to rapidly reduce the power to idle and begin a

cies

high rate of descent, you better be prepared to handle a real emergency, because you just created one! You will have another emergency when you go to have the repairs made.

I suggest that you learn all you can about your engine, how rapidly it is supposed to be cooled down and how long can it be operated at a reduced power setting in a high-speed descent. I do not believe that any pilot examiner will be offended if you demonstrate that you can effectively make an emergency descent by following proper procedures. If the examiner has a particular method whereby he/she requires a rapid reduction of power and a high-speed descent, maybe you can have some information from the manufacturer and the *Airplane Flying Handbook* to show him/her. Then impress the examiner with your ability to fly the maneuver safely and in compliance with the manufacturer's suggestions!

Save your engine. You just might want to use it on a dark and stormy night, over the mountains, or flying out over water travelling to the Bahamas. Or, you just might want to save some money on engine maintenance!

Tom Jones is the Operations Unit Supervisor at the Richmond (VA) FSDO. This article was written with the assistance of Maintenance Inspectors of the Richmond FSDO. The suggestion for this article came after repeated reports of instances where training aircraft engine cylinders cracked prematurely. Maintenance technicians who work for flight training establishments often bring this kind of information to our maintenance inspectors.

2001 EAA HALLS OF FAME INDUCTEES

On November 2, the Experimental Aircraft Association (EAA) honored eight people, who have contributed greatly to the world of flight, as the newest members of the EAA-affiliated Halls of Fame.

HOMEBUILDERS' HALL OF FAME: John Monnett of Oshkosh, WI, has been a leading aircraft designer for 30 years. He created the Sonerai, Monerai, Moni, Monex and, most recently, the Sonex. He is also renowned for affordable Volkswagen engine conversions for aircraft, notably the Super Vee and Aero Vee.

INTERNATIONAL AEROBATIC CLUB HALL OF FAME: Michael Heuer of Memphis, TN, has been involved in sport aerobatics since 1965 and helped write the first IAC rulebook in 1970. He has served as president of the FAI International Aerobatics Commission since 1986, and an IAC officer or director longer than any other person.

ULTRALIGHT HALL OF FAME: W. Michael "Mike" Sacrey, a Voluntown, CT, resident, is an experienced pilot and instructor who was the FAA official responsible for creating Part 103, ultralight air regulations. His support and vision allowed ultralight flight to grow safely over the past two decades.

WARBIRDS HALL OF FAME: Ed Maloney, a Chino, CA, resident, has amassed an impressive collection of warbird aircraft over the past 50 years, which evolved into the Planes of Fame Museum, the oldest privately operated air museum in the world. He has also written 26 aviation books.

Lincoln Dexter, who resides in North Fort Myers, FL, has logged more than 32,000 of flight time, many of them in warbird aircraft. He is a former Warbird Flight Line Chairman at EAA AirVenture and Warbirds of America director.

VINTAGE AIRCRAFT ASSOCIATION HALL OF FAME: Dr. Roy Wicker, who now resides in Quitman, GA, is one of the nation's leading aircraft restorers. His restorations and building projects have been consistent award winners and become known for their meticulous craftsmanship.

Ted Koston, a Melrose Park, IL, resident, has helped preserve vintage aircraft through his photography career. He is the founder of the Midwest Aviation Photographers Association and an EAA volunteer photographer for nearly 40 years.

FLIGHT INSTRUCTORS HALL OF FAME: Amelia Reid, who died in March 2001, taught more than 4,000 students to fly after beginning her California flight school out of the trunk of a 1959 Ford. Among her students was legendary airshow pilot Sean D. Tucker. Over 60 years, she logged more than 55,000 flight hours.

"All of these people have contributed much to the world of flight," said EAA President Tom Poberezny. "Each has carved a unique niche in aviation history. They represent the best that recreational aviation has to offer and serve as an example for everyone involved in flying. We are honored to welcome them as our newest inductees to the EAA Halls of Fame."

• Fuel Funnels

I saw your articles about static electricity and fueling aircraft (March 2001 issue). Did you know that we make a plastic CONDUCTIVE fuel funnel that is used for aircraft and marine equipment that is static electricity safe, and it also removes water and debris from fuel down to .005 inch?

If you go to my web site at <http://www.generatorjoe.net> you can see these products and a video as well. I am the worldwide distributor for these products, and we would like to see them in use more.

These funnels can prevent accidents. We also have conductive fuel cans with grounding leads to attach to the aircraft. With these two products static electricity is totally eliminated as the fuel can, funnel, and aircraft are all at the same potential. There is no other system that we know of that does this.

Joe Romano
"GeneratorJoe"
via e-mail

Thank you for the information you e-mailed us. Although FAA doesn't endorse any product or service, we checked your web site and found the section about your conductive funnels very interesting. We will let our readers make their own decisions about your product.

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to H. Dean Chamberlain, FORUM Editor, FAA AVIATION NEWS, AFS-805, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463; e-mail address:

Dean.Chamberlain@faa.gov

• Offer to Help

A recent FORUM participant was seeking copies of articles printed in past issues of your publication and your reply seemed to indicate that you might not be able to provide them.

I believe that I have every issue of your magazine since the November/December 1979 issue to date, and I would be glad to make copies of old articles for your readers. They may write me at P.O. Box 2718, Pampa, TX 79066-2718. Please send a self-addressed stamped envelope.

Paul D. Loyd
Pampa, TX

Thank you for your offer.

• Supplemental Oxygen vs Density Altitude

The Mountain Flying issue set off a "hangar flying session" on the subject [Supplemental Oxygen Vs Density Altitude]. 14 Code of Federal Regulations §91.211(1) "At cabin pressure altitudes above 12,500 feet (MSL) up to and including 14,000 feet...." The discussion raised the question as to whether density altitude affected cabin pressure altitude. It seems logical that it does.

Given a hot day, maintaining a safe 2,000 feet above a mountain ridgeline of 9,000 feet would mean flying at 11,000 feet MSL. On a hot summer day in the western U.S., density altitude could be as much as 3,000 feet above MSL altitude or 14,000 feet. It would also seem that if the altimeter were briefly set to 29.92 it would read cabin pressure altitude.

An anesthesiologist/pilot has done some research on hypoxia by using a portable oxymeter to measure blood oxygen levels on persons, including himself, while flying at various altitudes and times. He described a blood oxygen level of 87 or 88 percent of normal sea level numbers as about the usual readings at 8 or 9,000 feet. It is the level at which most people begin to loose some mental sharpness. Travelers visiting 8 or 9,000 foot mountain resorts often report "flu" symptoms. This is a typical reaction to oxygen deprivation.

Lately, oxymeters small enough to wear on a fingertip have become available. It would be interesting to see what some research with mountain pilots would show. Perhaps, just when they need to be at their best, they are not quite as sharp as they would like to be. It could also be a problem for older pilots.

The doctor mentioned above said that when he flew his plane he used low flow oxygen full time at night and above 5,000 feet days. He said it also reduced fatigue on long flights. Airline cabin pressures of around 8,000 feet may have something do to with jet lag. Do military pilots use oxygen at lower levels?

It would be interesting to know if any of the Safety Program Managers mentioned in the issue have any thoughts on the subject.

Stuart L. Faber
Cincinnati, OH

The points you brought out are certainly valid and §91.211(1) must be adhered to for any mountain flight. If the mountain flight will be at the altitude or for the duration of time that exceeds the §91.211(1) rule, then supplemental oxygen must be used.

The Mountain Flying issue of FAA Aviation News addressed flying done primarily in the canyons of the mountains, while circumnavigating the higher peaks and altitudes. Although we know that there are higher air strips in the world, the highest in the Wilderness Areas was 7,160 feet with three or four others above 6,000 feet, therefore the use of oxygen would be optional.

SABATINI NAMED FAA ASSOCIATE ADMINISTRATOR FOR REGULATION AND CERTIFICATION

As the new associate administrator for regulation and certification, Nicholas A. Sabatini comes to the position with 22 years of experience at the FAA. He replaces Thomas E. McSweeny, who retired from the FAA after a long and distinguished career.

"Nick Sabatini is a respected, proven leader," said FAA Administrator Jane Garvey. "His outstanding management skills and extensive aviation safety experience will be a great benefit to the American public."

As the new AVR-1, Sabatini will be responsible for a wide range of responsibilities—such as the certification, production approval, and continued airworthiness of aircraft. He will also be responsible for the certification of pilots, mechanics, and others in safety-related positions; certification of all operational and maintenance enterprises in domestic civil aviation; development of regulations; civil flight operations; and the certification and safety oversight of some 7,300 U.S. commercial airlines and air operators. He will oversee a work force of over 6,000 employees in the FAA's Washington headquarters, nine regional offices, and more than 125 field offices throughout the world.

Sabatini recently served as director of Flight Standards Service. From 1990 until May 2001, he was manager of the Flight Standards Division for the FAA's Eastern Region. From 1979 to 1990, he served in a variety of aviation operations and management positions in the agency's Eastern Region, as a principal operations inspector, aviation safety inspector, manager of the Flight Standards Division Operations Branch, and assistant manager of the Flight Standards Division. Before joining the FAA in 1979, Sabatini was a pilot for the U.S. Customs Service in New York. From 1958 to 1976, he was a police officer and helicopter pilot for the New York City Police Department. He served in the U.S. Army from 1956 to 1958.

Sabatini holds an airline transport pilot certificate and the following ratings: airplane multiengine land, rotorcraft-helicopter, DC-9, CE-500, BH206, EMB110, commercial privileges, airplane single-engine land, as well as flight and ground instructor certificates.

Sabatini attended the John Jay College of Criminal Justice, the Kellogg School, Northwestern University, and the Fletcher School of Law and Diplomacy at Tufts University.

Mario Toscano photo

Associate Administrator for Regulation and Certification Nick Sabatini

WE NEED YOUR HELP

Each year we beat the drums for all airmen to do some type of refresher training as we start a new flying season. On the maintenance side of the house, there is the Aviation Maintenance Technician Awards program with its specific training requirements and awards program. On the pilot side is the well-known "Wings" or Pilot Proficiency Awards Program.

For many maintenance technicians working for the larger size shops, training is an ongoing program. The same is true of many commercial pilots such as those who fly corporate or air carrier aircraft.

The question is, "How does the small shop technician or non-commercial pilot keep current?"

Which is best—manufacturer's training courses, industry seminars, safety meetings, local college aviation courses, or some other type of training? In many cases, cost determines if one someone can attend some type of training.

With the economy bordering on either an economic downturn or recession, depending upon your viewpoint, *FAA Aviation News* would like to publish over several issues, ideas on how

mechanics and pilots can increase their knowledge and training during these economic times. We will edit and publish the best ideas submitted. We prefer that the ideas were actually used to accomplish training. Please include what you thought of the training and if it provided a benefit.

From a new technical course to a new pilot rating, the choice is yours. What do you recommend?

AIR & SPACE MUSEUM EVENTS

Those airmen planning to visit Washington, DC, usually make time to visit the National Air and Space Museum (NASM). Here are some of the new exhibits and events scheduled.

LANGLEY IMAX(R)THEATER:
"The Magic of Flight"

This 40 minute film premiered in October and "is the story of human potential and the importance of training and performance. The film captures the thrill of flying from the Wright brothers' first successful flight to the amazing aerial maneuvers of Patty Wagstaff and the U.S. Navy Blue Angels."

FAMILY DAY: African American Pioneers in Aviation, Saturday, February 23, 10:00 a.m. - 3:00 p.m.

Hear dramatic stories about the challenges these pilots faced and their accomplishments in the 1920's and 1950's. Talk with Tuskegee Airmen from the Washington, DC, area about their experiences and also discover the many aviation career opportunities of today. Enjoy hands-on activities and a special storytime for children and their families.

FAMILY ACTIVITY: Women in Flight: A Museum Treasure Hunt Daily in March, 10:00 a.m. - 5:30 p.m.

Celebrate Women's History Month by picking up your self-guided activity from the Information Desk and follow the clues to learn more about the pioneers behind these treasures and their outstanding contributions to flight.

EINSTEIN PLANETARIUM OPENING: SkyVision Debut, Friday, March 15

Spectators experience animated, immersive, three-dimensional visions of the cosmos in the comfort of their theater seats. This full dome video system represents the next generation of planetariums. Whether it is two-dimensional historic footage or three-dimensional objects, SkyVision will change the visitor's experience, both physically and conceptually.

For more information, you can contact the Smithsonian's National Air and Space Museum (NASM) by phone at (202) 357-2700, on the Internet at <www.nasm.edu>, or write to NASM, Independence Avenue at Sixth Street,SW, Washington, DC 20560-0321.

BUSICK TO SERVE IN FAA'S TOP SECURITY POST

FAA Administrator Jane F. Garvey has named retired Rear Admiral Paul E. Busick to assume the responsibilities of the associate administrator for civil aviation security.

"We've worked to heighten aviation security in this country to unprecedented levels following the horrendous terrorist attacks of September 11," Garvey said. "Admiral Busick's extensive background in intelligence and transportation security will be invaluable as we continue to ensure that we're doing everything possible to keep the system secure."

Busick is an aviator who has commanded the Coast Guard Air Station in San Francisco, CA, and the Aviation Training Center in Mobile, AL. He has served as deputy chief of the office of law enforcement and defense operations, U.S. Coast Guard Headquarters. Following his promotion to rear admiral, he was appointed director of the Department of Transportation's office of intelligence and security where he served as the Secretary's national security advisor with policy responsibility for security measures in all modes of transportation. In 1996, he joined the National Security Council as a special assistant to the president and senior director for Gulf War Illnesses. Busick left active service in June 1998.

In October 1998, North Carolina Gov. James B. Hunt Jr. named Busick president and executive director of the state's Global TransPark Authority, a business center supporting companies involved in national and international commerce. Busick was appointed to a presidential oversight board for certain Department of Defense investigations in April 2000.

Busick's military awards include the Defense Distinguished Service Medal, the Coast Guard Distinguished Service Medal, and the Legion of Merit. He has also received the Department of Transportation's Distinguished Service Award and the FAA's Extraordinary Service Medal, its highest accolade for contributions to civil aviation.

A native of Lindenhurst, New York, Busick is a graduate of the U.S. Coast Guard Academy. He holds a master of science degree in industrial administration from Purdue University and is a graduate of the National War College in Washington, DC.

RUNWAY SAFETY CORNER

Answers to quiz:

1-C, 2-F,
3-A, 4-D,
5-B, 6-E

Editor's Runway

from the pen of Phyllis-Anne Duncan

BEFORE AND AFTER

As I write this, some two months after the attack on America, I have heard countless pundits say, "We will never return to the America of September 10, 2001." The world has changed, we hear, and to disagree or question this raises doubts about either your sanity or your patriotism. Is it so wrong to want to return to the aviation industry of September 10th? Some aspects of it need to change, and Congress has just done that—a bill which would federalize screeners at airports for a three-year period with airports that meet certain criteria being allowed to opt for private screeners after that time.

I have taken two trips in the National Airspace System since September 11—one for personal business and one for FAA business. Before and after September 11, in my travels, I have encountered the lack of conformity not only among the human personnel but also with the technology. The outfit, jewelry, and hair barrettes that did not set off the metal detector at one airport did so at another. At one airport, I had to turn on my laptop and Palm Pilot; at another I did not. After September 11, I have been frisked twice—once because "we're frisking every other person" and once because I was unable to communicate to the person wielding the wand that the stiffness in the upper heel of my boot was for support and not a weapon. I have always been a big believer in bilingual education and have no problem with street or store signage in more than one language. However, communicating over security issues is extremely important, and I believe the soon to be signed legislation requiring the screeners to not only be citizens, but speak English, is an important step towards feeling comfortable when undergoing this needed scrutiny. For an American who has never been in serious trouble with the law, experiencing a stranger's hands searching you in public is a sobering experience.

Several years ago I traveled to Europe on FAA business-—an overnight flight to Heathrow then a short flight across the Channel to Amsterdam. Except that the second flight was delayed by weather, and we didn't take off until late evening. After having been screened and placed in the waiting area, several hours into the wait I, of course, had to go to the bathroom. There were no restrooms in the waiting area, nor on the concourse, a security measure against IRA terrorism. The only way to get to a restroom was to leave the secured area, go down to the lower level of the concourse and use an employee bathroom. As this was being negotiated, the discomfort approached emergency status, and I was told I could use the employee bathroom. I would have to be escorted and then searched. Okay. No problem. Let's go.

By "searched" I thought that my carry-on bag and purse would have to be reexamined. No. This was a full frisking atop my clothes by a woman security guard. Seeing my discomfort, the personnel were all quite good-natured about it, but at least we could communicate. We spoke the same language—though the Brits might question that. On the same trip, upon leaving The Netherlands, we were screened and ushered into the glass-walled gate area. On duty outside the glass enclosure was a Dutch soldier in full body armor and carrying a machine gun. I remember thinking, rather arrogantly as I look back, that kind of display would never happen in my country.

That was before September 11. Most people now take solace from seeing guardsmen in airports, myself included, but I can't help but wonder—what exactly would have stopped a person with the fanatical intent that these 19 hijackers had? Better screening and strengthened cockpit doors will go a long way, but we—all branches of government—have to be proactive. As distasteful as it may be, we have to put ourselves inside the head of a terrorist and speculate what might be used against us next.

Will it be aviation again? I don't know. I wish I had that crystal ball.

Like a lot of Americans, I do long for the pre-September 11th America, and I also long for the aviation system that existed then. A few quasi-specific threats about aerial application aside, general aviation was not the mechanism or the means of the attacks on September 11th. The fact that some of the hijackers trained at U.S. flight schools while possessing no or expired visas is a matter for the Immigration and Naturalization Service. Wanting general aviation to return to the burgeoning growth it was experiencing before September 11 is neither crazy or unpatriotic. It's just wanting to get back to something familiar and comforting in the aftermath. In all of World War II general aviation continued and in fact was a critical part of coastal civil defense. We hear a lot lately about learning the lessons of history and not repeating mistakes. I hope we remember that aviation consists of military, transport, and general aviation together—a three-legged stool that is stable and comfortable. Cut off one of the legs, and the others can't help but wobble.

Before and after. I wish we didn't have to divide time that way. Let's hope time is not linear but circular and before will become now once again.

'Til next time…

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